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ABSTRACT

This long-range system entails the development of programs in the areas of educational goals and objectives, accounting and budgeting, and curriculum design. Ongoing programs of implementation and evaluation are an important feature. (DLG)

PPBES and School System Evaluation
-A Progress Report-
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PPBES is being tried out in Portland because we believe its tenets are rational even though to apply them effectively requires conditions in the real world of education that do not exist. For example PPBES assumes that:

1. Goals and objectives are the basis of school curricula and instruction.
2. Valid and reliable evaluation methods exist for all programs of education.
3. Resources are available to develop the capabilities needed to make a PPBES system work.
4. Specific programs (language arts) are independently responsible for educational outcomes (learning how to write).
5. Accountants and budget officers know enough about education, educators know enough about accounting and budgeting, and all know enough about goals, objectives, and evaluation to develop a system with the interfaces required by PPBES.

How, in the absence of these conditions can a school system commit itself to the use of PPBES? In Portland we see the movement as providing motivation to achieve these conditions, which are as urgently needed for good education as they are for good management. Our plan is long-range and consists of these major parts:

1. Designing a structure of goals and objectives, including operational definitions;
2. Designing an accounting-budgeting system, including a program-oriented chart of accounts;

3. Implementing the accounting budgeting system;
4. Developing a complete system of goals and objectives, including educational goals at the system, program, and course level;
5. Redesigning the program and curriculum using educational goals as the foundation for all programs;
6. Designing evaluation procedures for all types of program;
7. Implementing programs and program evaluation.

Although these steps are listed somewhat in preferred order, some can be developed concurrently. Obviously, the greater the resources of the District, the more lines of development can be pursued in a given span of time.

In Portland we are at various stages in the development of each of these components.

Designing a Structure of Goals and Objectives, Including Operational Definitions

No workable approach to goals and objectives in PPBS can be pieced together from the isolated, uncoordinated directions of the different educators and psychologists who are noted for their work with objectives. I mention this not in any sense to disparage the immensely valuable work of such men as Bloom, Krathwohl, Mager, Tyler, and Gagne, but to point out the need for a system of definitions that encompasses all of the evaluation requirements of a school system. This special problem is not addressed by these men.

In Portland the elements of such a system are encompassed in a document titled "Goals and Objectives in PPBS," which was published and distributed on a very limited basis through the Council of Great City Schools about a year ago.

Briefly, the elements of this system are: (1) defining three basic types of programs (management, support, and educational); (2) specifying the character of goals within each of the three types of programs (the goal of a support program is a desired type and condition of service whereas the goal of an educational program is a desired learning); (3) calling all program outcomes "goals," regardless of level of generality or specificity; (4) attaching the name "program change objective" to statements of intent to change programs in specified ways for specified reasons within specified times and making the PCO an integral component of budgeting; and (5) defining several levels of educational goals (system, program, course, and instructional), consistent with the way planning does or should take place in school systems.

I am not passing upon the merits of this system of definitions; I am only making the point that if a school system does not develop, agree on, and enforce a set of operational definitions, it will be impossible to educate teaching and administrative personnel on whom the success of such a system entirely depends. Also, if these definitions do not stand fairly rigorous tests of consistency and practical use, the system will quickly be discredited.

Designing an Accounting-Budgeting System, Including a Program-Oriented Chart of Accounts

Much criticism is heard about preoccupation with accounting as opposed to planning and evaluation in the development of PPBES systems, and there is some basis for that criticism.

On the other hand, a good accounting structure is essential to evaluation, since the capability sought in PPBES is to interpret results in relation to cost.

Most PPBES accounting models, including the one developed in Portland, use educational programs such as mathematics, home economics, and art as basic units of cost accounting, and this is logical because most school programs are organized this way for administration and instruction.

However, there are problems that immediately arise. For example, primary and to some extent higher grades have "homerooms" in which no accounting is maintained for time or materials allotted to the various subjects. Further, from the standpoint of curriculum theory and motivation, it is considered important not to compartmentalize learning.

This is one of several imperfections of PPBES with which we must live and which we should prepare to explain to those who expect more refined cost-benefit relationships than we can feasibly produce. I recommend that whenever learning is subsumed under a title like "homeroom," "core curriculum," "combined English-social studies," "general education" or "problem-solving core," educational goals from all subjects or disciplines represented should be stated for each such situation, and the program cost accounting structure should include a program with that name. Thus, even though a broader set of outcomes will be measured and related to the costs of that program, the integrity of cost-benefit relationships will be maintained.

This also leads to a more fundamental problem. Only limited interpretations can be placed on the degree to which programs such as math and language arts produce all learnings in a school that might be classified as math and language arts. It is apparent that writing and speaking skills are acquired in social studies; mathematics skills are acquired in science, etc.

I think there are only two levels at which accountability for cost and benefit can be related with an acceptable degree of fidelity--the entire school and the classroom. By this I mean that we can designate

the goals of subject programs like math and language arts for an entire school, but we should not hold teachers of math and language arts solely accountable for skills in these two areas. Rather, we should hold entire faculties and even administration and support personnel accountable. The concept of collective accountability can be as valuable as the concept of individual accountability, if seriously pursued.

At the classroom level, accountability can be achieved in terms of specific goals selected by the teacher or cooperatively by teacher and students.

Accountability at the classroom level, however, requires accounting and evaluating capabilities not yet possessed by most school systems. Proliferation of mini-courses, interdisciplinary courses, courses of different length, and team-taught courses all pose problems for accounting and evaluation. These problems cannot be resolved until a core of process and knowledge goals are identified that will become the focus of accountability for all such courses and arrangements. There is little point in accounting for expenditures at the classroom level until we are able to deal effectively with educational goals and evaluation.

To summarize, it is essential to develop a cost accounting structure as a part of the PPBES system, but the design of accounting systems should be participated in by educators who will advise accountants as to what program categories are and are not realistic units for relating costs to benefits.

Implementing the Accounting-Budgeting System

It has already been mentioned that operational definitions for all aspects of the PPBS system are a prerequisite for successful staff education. A second requirement is a team of accounting, budgeting, curriculum, and evaluation personnel who concur in these definitions and who work together in staff education and in putting the system to work. To these

ingredients should be added a supportive superintendent and a coordinator for the entire process.

The budget process offers the primary means for making goals and objectives of the system explicit. In the Portland system, the budgeting process requires all heads of schools and departments to submit written program change objectives. These can be of three kinds -- those involving additional funds; those involving reallocation of funds; and those requiring no reallocated or additional funds. The last type is encouraged to communicate to the Board and public the planned improvements of schools and departments.

Goals (desired long-term outcomes) are also generated by schools and departments for educational, support, and management programs, and these are printed in the budget.

Developing a Complete System of Goals and Objectives, Including Educational Goals at the System, Program, and Course Level

The purpose of hierarchical arrangements of educational goals is to provide audit paths from broad, general goal statements to those basic elements of learning required to produce the broader outcomes. A series of translations is usually required to do this.

Educators have been inept at this process, seeming unclear both as to what they are about and how it should be done. Terms such as purposes, aims, goals, and objectives have been employed to designate levels of generality of outcome statements, but the definitions and distinctions used with these terms are operationally deficient, failing to produce effective translations of the general to the particular.

We rid ourselves of much confusion by eliminating use of such terms. All outcomes of educational programs are called goals, regardless of the generality or specificity of the statement. We have tied level of generality of goal statements to program levels, saying that general goals

should be defined for full programs such as science, and specific goals for subprograms such as biology. Still more specific goals may be stated by the teacher, but this is not a direct concern of the PPBES system.

We are aware of the arbitrariness of using system, program, course, and classroom as terms to distinguish levels of goal generality. However, since no single set of terms is likely to serve this purpose any better and since these terms permit distinctions that can be fashioned to the requirements of planning in school systems, they seem more promising than the ill-defined distinctions offered by such terms as purposes, aims, goals, and objectives.

In our efforts to define "program level" goals, we temporarily bypassed "system level" goals. System goals will be reexamined later using state goals now being formulated, citizen input, and the program level goals of the District. To approach the defining of system goals before making explicit the goals of existing school programs would result in recreating a set of platitudes and generalizations that bears the usual sterile relationship to the learning programs of the schools.

Criteria for "course level" goals have been established, and in the past year 1500 science and 1000 language arts goals were produced. Next summer, goals will be produced in math, social studies, health, physical education, art, and music. Within four years, all fields of instruction should be covered.

These goals are not prescribed. They are options from which to build courses. They are not organized by course titles, but by detailed subject matter and process taxonomies. They are designed to stimulate thought as to what might be learned and to provide models that teachers and students can use to generate still further goals.

In the long range PPBS development, the program goals will form the basis for accountability at the school level, and course goals at the classroom level. Schools will be responsible to see that goals of courses have the cumulative effect of promoting attainment of the broader program goals. The relationship of educational goals at different levels of evaluation is shown in Figure A.

Management and support goals and program change objectives complete the system-wide structure upon which evaluation is based.

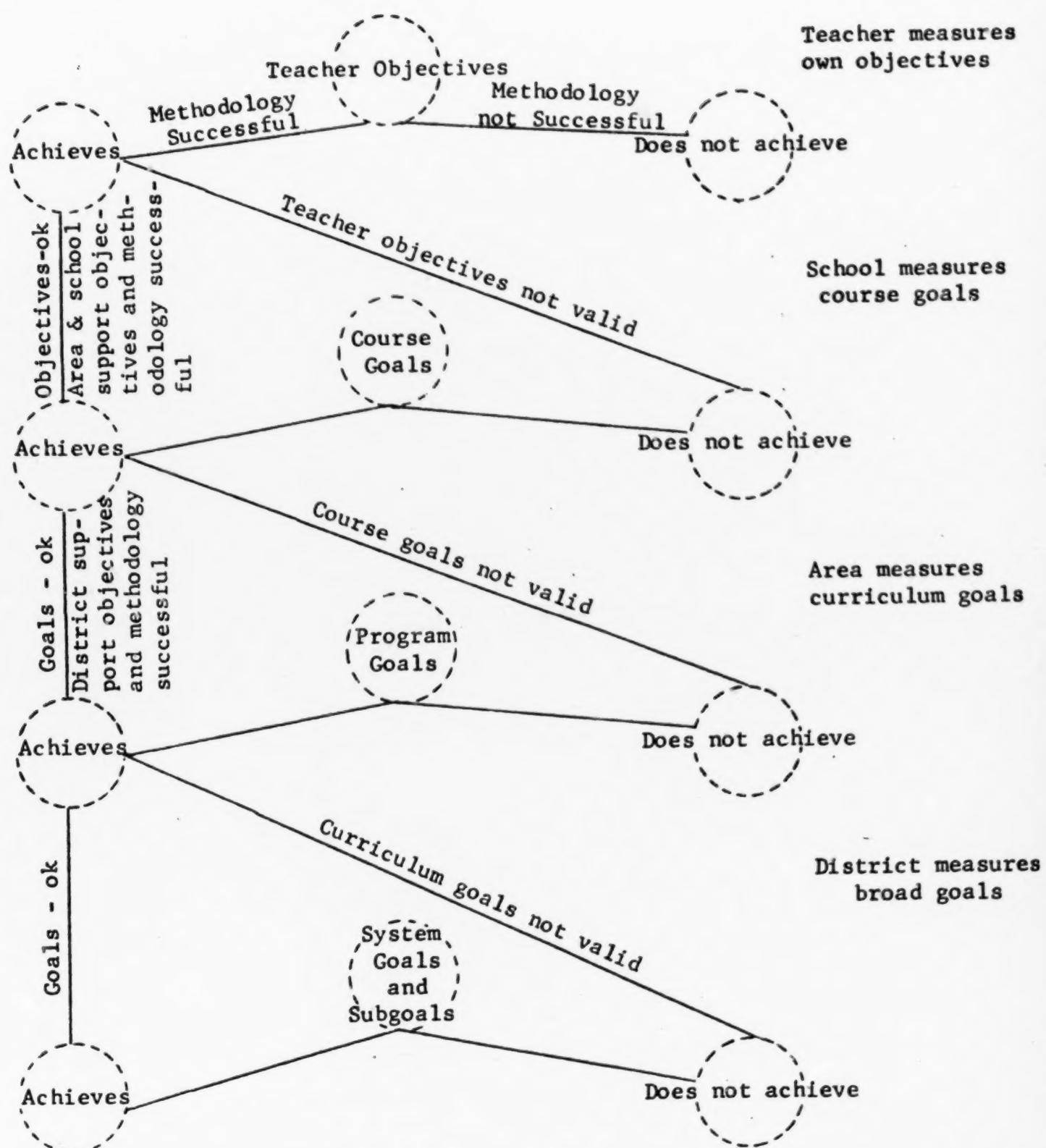
Redesigning the Program and Curriculum Using Educational Goals as the Foundation for all Programs

This is, perhaps, the most critical and difficult problem faced in developing the PPBS system. If goals do not serve teachers usefully in planning instruction, the entire system will not "wash." That is why we have chosen to work at goal defining intensively in preparation for curriculum planning. Much care has been exercised in setting up the criteria for course level goals to guarantee their utility and sensibleness in the eyes of teachers. We have purged that language of behavioral objectives required for measurement and have substituted language useful for planning. Measurement criteria must come--but must not be represented to teachers as synonymous with statements of desired learning.

Surprisingly, perhaps, a mode and philosophy of curriculum planning is emerging from our goal defining efforts. For one thing, although goals are classified according to subject matter, they can be combined conveniently around an instructional concept or theme. For example, students and teachers interested in studying ecology or population control may draw goals from science, social studies, language arts, and other goal collections as appropriate. The flexibility of those collections in interdisciplinary planning promises a new and valuable resource for curriculum building.

Figure A

Levels of Evaluation



Another insight that is developing is the relationship and interdependencies that exist between process, knowledge, and values. Before finishing the initial work of defining course level goals, it appears necessary to produce goals of all three types. By defining the skills, knowledge, and values desired, it will be possible to design learning contexts or curricula that are likely to produce these ends in logical combinations and relationships. A one-to-one relationship between a learning experience and an educational outcome no longer appears to be a productive curriculum construction model, if indeed it ever was.

Designing Evaluation Procedures for all Types of Program

As previously stated, the Portland system defines three types of program: management, support, and educational. Evaluation requirements differ, because the nature of goals differs with each type of program. Management goals concern the establishment of programs and procedures for essential system functions: setting goals, determining priorities, planning, operating, and evaluating programs. Management effectiveness is evaluated in terms of the existence and the quality of programs and procedures deemed essential to system effectiveness. Thus, the effectiveness of a manager is inferred from the success of those support and educational programs he establishes and administers.

If a manager fails to provide for evaluation of all programs he administers, he is not providing a function essential to the management of any enterprise, and his evaluation as a manager should reflect this. If he undertakes to evaluate another program himself, he is stepping into a support role, and is accountable for the quality of the evaluation he makes, just as he would hold a professional evaluator accountable. In progressing down the scale of management (school district, area, and school), the more

likely it is that a manager will fill support as well as management roles, because he does not have the resources to employ specialists for all essential functions.

Goals of support programs are stated as goals of service. They state both the service and the recipient, and wherever possible standards of service. A goal of the Portland school maintenance department is:

"To provide emergency maintenance services to principals, and to respond to requests for such service in not less than 30 minutes after a call is received."

A goal of the storeroom-warehousing department is:

"To provide the purchasing department supply orders optimally consolidated to secure lowest possible prices."

A goal of the library program of a school is:

"To provide teachers and students assistance in securing materials and media that relate to their educational goals."

Note that each support goal states the nature of the service, who receives it, and to the extent possible the standard or quality of service intended. This provides all components needed for evaluation. Note that the system encourages evaluation by receivers of service as well as by managers of service.

Much attention is being given to evaluating instructional outcomes. Although we are concentrating on defining outcomes at present, evaluation is being explored at the same time.

The large volumes of language arts and science goals produced last summer provide many models, some of which fall readily into Bloom's cognitive taxonomy and others of which do not. In cooperation with Teaching Research in Monmouth we are examining the measurement and evaluation implications of various types and levels of goals, and will soon produce a set of prototype test items. These will be used by classroom teachers to develop items for goals of similar types. Accountability at

the classroom level will begin to acquire meaning and feasibility as measurement capability develops.

Some attention is being given to general indicators of system health, but this is not the present focus of effort. Clarification of educational purposes in all existing programs is a first priority; and establishing these purposes as the basis of instruction at all levels is our second order of business. Review and revision of these purposes from a community perspective will most certainly follow; but doing a good job of getting our professional house in order seems a necessary prerequisite. To put it simply, "If we don't know exactly what we are doing and why we are doing it, how can we or the public know if change is needed or desirable?"

Implementing Programs and Program Evaluation

Implementing curricula based on goals involves a number of key management and teaching personnel, and success can only be achieved through involvement and concurrence of such personnel in all stages previously described. The larger the organization, the more complex this problem is. I can only advise you that failure to gain this involvement and concurrence is a ticket to oblivion. A careful assessment of the developmental contexts and the input resources of your system, ala the CIPP model, is recommended.

We have worked closely with area superintendents and curriculum administrators who together with teacher committees in our system will be the designers and implementers of program change. They understand and concur in our goal development work, and have representatives on the committees doing this work. Some are consulting with us regarding curriculum design and have organized committees to begin curriculum planning based on goals already produced. All have reworked our prototype program level goals and have adopted their own versions for which they now accept accountability.

The PPBES system is unfolding by degrees, but is not being pushed in areas where capabilities do not portend success.

The idea that a full scale, wholly revised set of programs based on goals and objectives can be achieved at any given time is unrealistic. This year we will encourage program change objectives in budget preparation. Area evaluation administrators will work with principals in formulating evaluation plans required with PCO's. As competence is gained and more good examples are generated, we expect more general use of this planning and evaluation device.

The development of educational goals at the program and course level is proceeding at different rates in different fields in each administrative area, and development of instructional and evaluation programs will occur the same way. Real progress has been made, but a long road lies ahead.

Evaluation
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